Galileo: Science Data Management During the Second Earth Encounter

Theodore C. Clarke and Paul C. fisher (Jet Propulsion Labor-story, California Institute of 1 ethnology, Pasadena, (A 91 109)

Galileo flew by Venus in February 1990, Earth in December 1990, the asteroid Gaspra in October 1991, and Earth again in December 1992. The data collected at Venus was stored by Galileo on its onboard tape recorder and was played back to Earth during the first Earth encounter. Similarly, the data collected at Gaspra was stored by Galileo on the tape recorder and was played back in late November 1992 when Galileo was close enough to the Earth for telecommunications to support the playback. Data collected at Earth and Moon during the 1992 flyby were relayed to Earth in realtime, or in some cases recorded and played back shortly after acquisition.

This paper reviews the configuration and performance of the Galileo Science Data System in support of the second Earth encounter. In particular, configuration and performance of the Galileo SDS Science VAX Cluster, wide and local area networks, ancillary data system know as SPICE, science data packet generation and distribution system known as NERTII, high rate science data processing system known as MIPS, anti the Galileo Science Catalog wiii be reviewed. in addition, a workstation was set up in the Smithsonian institute's National Air and Space Museum to display selected Earth and Moon science data in real time, employing all elements of the Galileo SDS mentioned above. 1 his system and its performance during the encounter wiii aiso be reviewed.